



Modern Radio Frequency System: Theory & Practical Design Techniques

NTTS Pre-approved
50% course fee reimbursement

7-8 October 2011

This course aims to provide an opportunity for participants to acquire technical insights on the vital aspects of Modern RF System Design from an industry and practical perspective.

It is an intermediate level training for circuit, system engineers and managers. The vital aspects and design considerations on various functional blocks of RF system and products will be discussed and analyzed with CAD tools. Designs on commercial products will be presented to participants to gain in-depth and integral perspective on RF System Design. Practical design issues and tips on some critical RF building block such as LNA, mixer and antenna will be presented.

The course will be conducted by an RF expert with rich industrial experience. Interactive and open discussions between speaker and participants are encouraged and facilitated to make the whole course more interesting and thought stimulating.

TARGET AUDIENCE

System engineers, wireless product designers, RF and microwave circuit design engineers, field application engineers, business development engineers and managers involved in radio frequency or wireless products and systems.

BENEFITS

Upon completion of this course, participants should be able to:

1. understand the key functional blocks of Modern RF Systems and their characteristics and specifications
2. understand how component blocks interact and the implications on overall system performance
3. compare and evaluate different types of receiver and transmitter architectures
4. acquire practical design techniques from case studies on commercial RF products

DATE, TIME & VENUE

Date : 7-8 October 2011

Time : 09:30-17:00

Venue : 1/F, HKPC Building, 78 Tat Chee Avenue, Kowloon

COURSE FEE

HK\$2,700

HK\$2,430 (Enrol on or before 16 September 2011)

The training course has been successfully pre-approved under the New Technology Training Scheme (NTTS). Each eligible trainee can obtain a training grant of 50% of the actual course fee. For NTTS details, please visit : <http://ntts.vtc.edu.hk>

Organizer



Co-organizer



Supporting Organization



Agilent Technologies

COURSE CONTENT

Receiver – Critical Parameters to Advanced Designs

- System characteristics
 - Signal and noise
 - Noise temperature, noise bandwidth, noise figure, sensitivity
- Linearity
 - Dynamic Range, one dB compression point, intermodulation, automatic gain control
- Critical Circuit blocks
 - LNA, local oscillator, mixer, IF amplifier, demodulator, baseband amplifier
- System Architectures and design considerations
 - Heterodyne, direct conversion, Image-reject and Low-IF Receiver
- Sample receiver designs

Frequency Synthesizer – High Performance Designs

- Circuit blocks: RF Oscillator, buffer amplifier, PLL chip, loop filter, quartz crystal oscillator
- Major Issues: Phase noise, channel acquisition, programming technique, frequency stability, temperature, supply voltage, load pulling

Transmitter – Critical Considerations

- Circuit blocks: oscillator, modulator, buffer amplifier, frequency multiplier, power amplifier, output filter
- Major issues: C/N, modulation depth, voltage gain, power gain, power efficiency, harmonic prevention and suppression

Miniature Antennas for Portable Electronics

- Antenna Fundamentals
 - Radiation mechanism
 - Source of radiation
 - Characteristic of radiation
- Parameters and specifications
 - Radiation pattern, antenna efficiency, aperture concept, directivity and gain
- Types of antenna and performance
 - Dipole
 - Monopole
 - Loop
 - Miniature antennas – patch, inverted-L, inverted-F, meandered line
- Practical design considerations and techniques for portable electronics

ABOUT THE SPEAKER

Henry Lau received his M.Sc. and MBA degrees from UK and USA respectively. He has more than 21 years of experience in designing RF systems, products and RFICs in both Hong Kong and US. He worked for Motorola and Conexant in US as Principal Engineer on developing RFICs for cellular phone and silicon tuner applications. Mr Lau holds five patents, all in RF designs. He is currently running Lexiwave Technology, a fables semiconductor company in Hong Kong and US designing and selling RFICs, RF modules and RF solutions. He has also been teaching numerous RF-related courses internationally.

ENROLMENT PROCEDURE

1. For Seat Reservation: Please register online (<http://events.hkpc.org/register.php?code=40144983>) OR complete the enrolment form and send by email to hollyip@hkpc.org or fax to 2788 5350
2. Please pay the course fee via one of the methods listed in "Payment Methods".

PAYMENT METHODS

1. Cheque - please send the cheque to: Holly Ip, PTI 3702, 3/F, HKPC Building, 78 Tat Chee Avenue, Kowloon
**All cheques should be crossed and made payable to "Hong Kong Productivity Council"*
2. Visa / Master: please pay in personal at the enrolment counter located at 1/F, HKPC Building
**Mon – Fri: 09:00-21:00 | Sat: 09:00-17:00*
3. Online Payment: for details, please refer to www.hktrainingonline.com

ENQUIRY

Hong Kong Productivity Council

Miss Holly IP

Tel: 2788 6366

Email: hollyip@hkpc.org

Miss YEUNG

Tel: 2788 5833

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Lexiwave Technology Ltd.

Mr. Edward LAM

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Enrolment Form

Course Code : 40144983

Course Name : Modern Radio Frequency System: Theory & Practical Design Techniques

Course fee : HK\$2,700

HK\$2,430 (Enrol on or before 16 September 2011)

Course date : 7-8 October 2011

Applicant Information

Name : _____ (English) _____ (Chinese) Title : Mr Miss Mrs Ms

Company Name : _____ Position : _____

Tel : _____ Mobile : _____ Email : _____

Mailing Add : _____

Payment Method

Cheque (Cheque No : _____)

Cash / EPS / Visa / Master

Declaration :

I declare that all information provided in this enrolment form and the attached documents are, to the best of my knowledge, accurate and complete.

I consent that if admitted, I will comply with all the Rules and Regulations stipulated by the Institute.

I have read and understood the "Important Note" in this enrolment form is subject to revisions in the course pamphlets and the latest updates in the Institute's website.

IMPORTANT NOTE

1. Course fee must be accompanied with this form (or photocopy) before course commence, otherwise enrolment would be rejected.

2. HKPC has adopted a Personal Data (Privacy) Policy. Information about the policy is available at HKPC enrolment counters for collection. You may also contact our Personal Data Controlling Officer for further details.

3. Applicants are encouraged to pay by credit cards, EPS or cheques, if possible. Amount received will be imprinted. Cheques are subject to bank clearance.

4. Enrolment fee is not refundable unless HKPC is notified in writing of your withdrawal at least 5 working days before the course commences. A handling charge of HK\$200 will also be levied.

5. An applicant may, subject to approval from HKPC, nominate a person to attend the course on his/her behalf.

6. HKPC reserves the right to reject any application in any circumstances and for whatever reasons. Payment of fees should only be construed as conditional acceptance of application.

7. HKPC reserves the right to change the contents, venue and / or time as necessary.

8. Classes will be cancelled if typhoon signal No. 8 or above OR black rainstorm warning is still hoisted after (or is announced by the Hong Kong Observatory to be hoisted at/after) 6:00 a.m. Participants will be notified when the class will be made up as soon as possible.

Applicant's Signature : _____

Date : _____